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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Amit Lewin, et al.

Serial Number: 10/654,619

Filing Date: September 3, 2003

Title: SYSTEM FOR
TRANSPORTING
ETHERNET FRAMES OVER
VERY HIGH SPEED
DIGITAL SUBSCRIBER
LINES

Atty.Dkt.No.: 5957-48401

Examiner: Nguyen, Van Kim T.

Group/Art Unit: 2456

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CERTIFICATE OF TRANSMISSION
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No. 571-273-8300, on the date indicated below:On: September 11, 2009
Date/Dean M. Munyon/
Dean M. MunyonAPPEAL BRIEF

Further to the Notice of Panel Decision from Pre-Appeal Brief Review mailed August 11, 2009, Appellant presents this Appeal Brief, which has been prepared according to the new proposed Board rules. This Appeal Brief is timely filed; accordingly, no extension of time fee should be due. Appellant respectfully requests that the Board of Patent Appeals and Interferences consider this appeal.

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STATEMENT OF REAL PARTY IN INTEREST

The present application is owned by Spinel Ektronix LLC. An assignment of the present application to the owner is recorded at Reel 018407, Frame 0616.

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STATEMENT OF RELATED CASES

U.S. Patent Application Serial No. 11/484,797 is a continuation of the present application. No final decision has been issued by the Board or a Court, and no significant interlocutory decision has been issued by the Board or a Court in this case.

U.S. Patent Application Serial No. 10/430,480 is a copending application having at least one common inventor with the present application and having a disclosure that partially overlaps with the disclosure of the present application. U.S. Patent Application Serial No. 10/430,480 is currently pending on Appeal before the Board as Appeal Number 2009-6168. No final decision has been issued by the Board or a Court, and no significant interlocutory decision has been issued by the Board or a Court in this case.

JURISDICTIONAL STATEMENT

The Board has jurisdiction under 35 U.S.C. § 134(a). The Examiner mailed a final rejection on January 15, 2009, setting a three-month shortened statutory period for response. The time for responding to the final rejection expired on April 15, 2009. A notice of appeal and a request for pre-appeal brief review was filed on April 13, 2009, prior to the expiration of the time for responding to the final rejection. The notice of panel decision on the pre-appeal brief review was mailed on August 11, 2009. The time for filing an appeal brief is one month after the mailing date of the notice of panel decision, or September 11, 2009. The appeal brief is being filed on or before September 11, 2009.

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STATUS OF AMENDMENTS

No amendments to the claims have been filed subsequent to the rejection in the Final Office Action of January 15, 2009.

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GROUND'S OF REJECTION TO BE REVIEWED

1) Claims 8-11, 38-39, 41, 48-51, and 53-55 are rejected under 35 U.S.C. § 103(a) as being unpatenable over Terry, U.S. Patent No. 6,178,161 ("Terry") in view of Locklear, Jr., et al., U.S. Patent No. 5,999,565 ("Locklear"). NOTE: The Office Action refers to Locklear in the rejection, but lists Locklear as U.S. Patent No. 6,126,116, which is a patent to Dighe et al. The citations within the Office Action match Locklear (U.S. Patent No. 5,999,565), and thus Appellant presumes that the patent number listed in the rejection is a mistake.

2) Claims 30-32, 34-36, 40, 42-44, 46-47, and 52-56 are rejected under 35 U.S.C. § 103(a) as being unpatenable over Terry in view of Locklear and Treadaway et al., U.S. Patent No. 7,002,941 ("Treadaway").

3) Claims 33, 37, and 45 are rejected under 35 U.S.C. § 103(a) as being unpatenable over Terry in view of Locklear and Snodgrass et al., U.S. Patent No. 5,365,551 ("Snodgrass").

Appellant notes that the Final Office Action mailed January 15, 2009 ("Office Action") also included an obviousness-type double patenting rejection. Applicants submitted a Terminal Disclaimer on April 13, 2009, overcoming that rejection. Accordingly, the obviousness-type double

patenting rejection should be withdrawn. Appellant respectfully requests that the Examiner confirm withdrawal of the rejection in the record.

Appellant respectfully traverses the above rejections for at least the reasons set forth in more detail below.

STATEMENT OF FACTS

The Office Action rejected all pending claims over Terry in view of Locklear, Terry in view of Locklear and Treadaway, or Terry in view of Locklear and Snodgrass, as highlighted above. See Office Action, summary sheet. On April 13, 2009, Appellant filed a Notice of Appeal and a Request for Pre-Appeal Brief Review traversing the rejections ("Request"). See Notice of Appeal and Request for Preappeal Brief Review. On August 11, 2009, a Notice of Panel Decision from Pre-Appeal Brief Review was mailed, indicating that the Appeal should proceed to the Board of Patent Appeals and Interferences. See Notice of Panel Decision, page 1.

Overview of Terry

Terry teaches encapsulating an Ethernet frame within an Ethernet Collision Avoidance Protocol (ECAP) frame. See, for example, Fig. 2 of Terry. The ECAP fram is defined by Terry (as opposed to an industry

standard definition). See, for example, Fig. 2 of Terry and col. 6, lines 2-15).

Terry's teachings regarding ECAP frames include: "FIG. 2 illustrates one example of an ECAP data frame, comprising overhead information O/H, followed by a single Ethernet frame having the known form described below, followed by a check sequence CHK." (Terry, col. 6, lines 40-43).

Terry goes on to teach that the:

O/H field at the start of the ECAP frame for example consists of a few bytes comprising a preamble and start-of-frame (SOF) indication of a suitable form for the modulation method in use by the modems 12 and 14, possibly followed by other information such as an ECAP frame sequence number for frame identification in known manner (e.g. for identifying frames for acknowledgement or retransmission). The check sequence CHK at the end of the ECAP frame conveniently comprises a CRC sequence which can be produced in exactly the same manner as the FCS field of the Ethernet frame, the CRC operating on all of the information in the ECAP frame following the SOF indication up to and including the FCS at the end of the Ethernet frame. (Terry, col. 7, lines 13-25).

Terry teaches that the ECAP frames are transmitted in half-duplex mode between the modems 12 and 14 using a specialized transfer designed for the ECAP frames:

The ECAP communications of the buffered Ethernet frames involve half duplex transmission in which the master modem 12 has priority and control over the slave modem 14. Thus the master modem 12 determines when to send information downstream via the line 10, and informs the slave modem 14 when it is permitted to send information upstream via the line 10. To facilitate these communications, the information sent via the line 10 comprises not only the data packets of Ethernet frames but also control packets downstream and response packets upstream between the master and slave modems. (Terry, col. 6, lines 11-20)

Overview of Locklear

Locklear is generally concerned with a communication system that "supports communication sessions between a variety of networks and devices using, at least in part, XDSL communications." (Locklear, abstract, lines 3-6).

Specifically with regard to Ethernet, Locklear teaches that Ethernet frames are communicated via the interface 68 in Fig. 2, and are provided to the router 52: "Interface 68 couples device 12 to LAN 18. Interface 68 supports any suitable technology or protocol that provides communication between LAN 18 and router 52." (Locklear, col. 6, lines 34-36). "Intermediate protocol layer 64 couples to a second physical layer 66, such

as an Ethernet physical layer, which in turn couples to an interface 68 using line 70." (Locklear, col. 6, lines 21-24).

The router 52 includes protocol stacks 56 and 57, through which received Ethernet frames are processed and XDSL frames are generated (and vice versa): "Router 52 couples data lines 54 from modems 50 to a series of protocol layers. Protocol layers are arranged in a first stack 56 associated with XDSL communications and a second stack 57 associated with LAN communications. Router 52 performs open systems interconnect (OSI) model processing by passing data through protocol layers associated with stacks 56 and 57." (Locklear, col. 6, lines 4-10).

At col. 6, lines 13-25, Locklear teaches:

Lines 54 couple to a first physical layer 58, such as an ADSL physical layer, which in turn couples to an intermediate protocol layer 60, such as a multilink point-to-point protocol (PPP). A common protocol layer 62, such as an Internet Protocol (IP) layer, provides a common protocol between first stack 56 and second stack 57. Common protocol layer 62 in second stack 57 couples to an intermediate protocol layer 64, such as a media access controller (MAC) layer. Intermediate protocol layer 64 couples to a second physical layer 66, such as an Ethernet physical layer, which in turn couples to an interface 68 using line 70.

At col. 6, line 60-col. 7, line 1, Locklear teaches the passing of packets from either Ethernet to XDSL or XDSL to Ethernet:

In operation, device 12 receives inbound or downstream data associated with a session on one or more modems 50 coupled to twisted pair lines 22, passes the data through protocol layers of router 52, and communicates the data through interface 68 to LAN 18. Device 12 also receives outbound or upstream data associated with the session from LAN 18 through interface 68, passes the data through protocol layers of router 52, and communicates the data through one or more modems 50 to twisted pair lines 22.

Locklear states the XDSL is "any suitable digital subscriber line technology such as ADSL, VDSL, or HDSL" (Locklear, col. 5, lines 61-63).

It is known that the VDSL standard specifies fixed-length frames (see the specification of the present application, page 5, lines 2-3).

Overview of Treadaway:

Treadaway teaches a variable-length radio frame that can encompass an Ethernet Packet. "Referring to FIG. 5, the data payload from the Ethernet packet is stored in the data field 306. Note that 100BASE-T Ethernet data packets are conventionally of variable length. In particular, the data payload portion for a conventional 100BASE-T Ethernet packet can vary between 64

and 1518 octets (bytes). Thus, the length of the data field 304 can vary between 64 and 1518 bytes." (Treadaway, col. 14, lines 32-39).

Claims 8-11, 38, 41, 48-50, and 53-55:

Claim 8 recites a combination of features including: "encapsulating ... Ethernet frames within a plurality of frames, wherein each Ethernet frame is encapsulated entirely within a respective frame of the plurality of frames ... and transmitting said plurality of frames over said VDSL facility." See claim 8.

The Office Action relies on Terry for encapsulating Ethernet frames in ECAP frames (Office Action, page 4, third paragraph). The Office Action relies on Locklear for transmitting Ethernet frames over a VDSL facility (Office Action, page 4, fourth paragraph).

In the Request, Appellant disagreed that claim 8 would be obvious over Terry in view of Locklear (Request, page 2, first full paragraph). Specifically, Appellant noted that Locklear teaches decapsulating Ethernet frames to extract the IP packet within the frame, and reencapsulating that IP packet in VDSL frames (Request, page 2, lines 9-12 and page 2, line 18-page 3, last line). Appellant noted that decapsulating and encapsulating is completely different from encapsulating Ethernet frames in ECAP frames as

taught by Terry (Request, page 2, lines 12-14). Appellant further noted that Terry's variable length ECAP frames cannot be used with Locklear's fixed length VDSL modems (Request, page 2, lines 14-16 and page 4, line 1-page 5, line 5). Appellants also noted that claims 10, 38, 48, and 53 recite combinations of features that are patentable over Terry and Locklear as well. (Request, page 5, first full paragraph).

Claim 10 recites a combination of features including: "receiving frames from said VDSL facility, wherein a given Ethernet frame is encapsulated entirely within a received frame."

Claim 38 recites a combination of features including: "encapsulating the Ethernet frame within a first frame; and transmitting the first frame over a very high speed digital subscriber line (VDSL) facility."

Claim 48 recites a combination of features including: "encapsulating an Ethernet frame within a first frame to be transmitted over a very high speed digital subscriber line (VDSL) facility."

Claim 53 recites a combination of features including: "extracting an Ethernet frame from a first frame received over a very high speed digital subscriber line (VDSL) facility."

Claims 30-32, 34-36, 40, 42-44, 46-47, 52, and 56:

The Office Action relies on Treadaway in combination with Terry and Locklear to for features of claims 30-32, 34-36, 40, 42-44, 46-47, 52, and 56 (Office Action, page 6, first paragraph). Treadaway teaches a variable length packet that is larger than the Ethernet packet (Treadaway, col. 14, lines 32-39).

Claims 33, 37, 45:

The Office Action relies on Snodgrass to teach Barker codes (Office Action, page 7, item 7).

ARGUMENT

The Argument presented below explains why the Examiner erred with respect to various rejections on appeal. While arguments that are not made below are waived by rule for the appeal (37 C.F.R. § 41.37(o)(2)), Appellant expressly reserves the right to make additional arguments in prosecution subsequent to the Board's decision on this Appeal, in a continuation or divisional application from the present application, and/or in any Court in which any patent issuing from the present application or a continuation or divisional application is litigated. The mere fact that a rejection is not argued below, or that an argument that could be made has not been made below, is not an admission by Appellant that the rejection is correct.

First Ground of Rejection:

Claims 8-11, 38-39, 41, 48-51, and 53-55 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Terry in view of Locklear. Appellant respectfully traverses for at least the following reasons.

Claim 8:

An argument similar to this argument was previously made to the Examiner in the Request. However, the argument has been revised and expanded from that presented in the Request.

Applicants respectfully submit that claims 8-11 and 30-56 recite combinations of features not taught or suggested in the cited art. For example, claim 8 recites a combination of features including: "encapsulating ... Ethernet frames within a plurality of frames, wherein each Ethernet frame is encapsulated entirely within a respective frame of the plurality of frames ... and transmitting said plurality of frames over said VDSL facility."

The combination of Terry and Locklear does not teach the features of the claims

As noted above, Terry teaches encapsulating Ethernet frames into ECAP frames and transmitting the ECAP frames using a specialized protocol developed for the ECAP frames. Terry includes no discussion of VDSL facilities, or any other XDSL facility, and does not teach transmission on any such facility. Locklear, on the other hand, teaches receiving Ethernet frames, decapsulating each frame to extract the underlying IP packet, and then encapsulating the IP packet into XDSL frames for transmission on the XDSL communication medium. As explained below, one of skill in the art, when presented with these teachings, would not arrive at the features of claim 8.

One of skill in the art would realize that Terry's ECAP frames cannot simply be transmitted on VDSL. Locklear does include teachings relating to transmitting data received via an Ethernet protocol on an XDSL system. The mechanism taught by Locklear to achieve this end, however, would lead a skilled artisan to adopt an approach that falls outside the scope of claim 8. More specifically, when presented with Locklear's teachings, the skilled artisan would be led to decapsulate Terry's ECAP frame and Ethernet frame to extract the IP packet, and then to encapsulate the IP packet for transmission on XDSL. That is, the skilled artisan would be led to a configuration in which the **Ethernet/ECAP frame is destroyed** and the **underlying IP packet is encapsulated in XDSL frames.** Such a modification/adaptation of the teachings of Terry and Locklear would not result in the features of claim 8: "encapsulating ... Ethernet frames within a plurality of frames, wherein each Ethernet frame is encapsulated entirely within a respective frame of the plurality of frames ... and transmitting said plurality of frames over said VDSL facility." Stated another way, Locklear includes no relevant teachings that would permit an ECAP frame to be transmitted over a "VDSL facility.

Locklear Does not Teach Encapsulating Ethernet Frames in VDSL Frames

Locklear teaches processing Ethernet frames in an IP stack to obtain the IP packet from the Ethernet frame, and encapsulating the IP packet in one or more VDSL frames for transmission on the VDSL interface. Specifically, Ethernet frames are received by the interface 68 in Fig. 2, and are provided to the router 52. The router 52 includes protocol stacks 56 and 57, through which received Ethernet frames are processed and XDSL frames are generated. The protocol stack 57 strips away the Ethernet frame data to arrive at the underlying IP packet, which is then provided to the IP layer of the stack 56. The stack 56 packages the IP packet as one or more VDSL frames for transmission on VDSL. See, e.g., Locklear, col. 6, lines 4-10, lines 13-25, and col. 6, line 60-col. 7, line 1, as highlighted above.

Locklear clearly teaches that all XDSL traffic passes through the XDSL protocol layers up to the IP layer, and then down from the IP layer through the Ethernet protocol layers to the Ethernet interface. Similarly, all Ethernet traffic passes through the Ethernet protocol layers to the IP layer, then down through the XDSL protocol layers to the XDSL modems. The common layer is the IP layer, at which the IP packet exists and all XDSL or Ethernet protocol data has been removed. Therefore, while Locklear does teach transmitting data received from Ethernet on XDSL (and vice versa), there is no encapsulation of the Ethernet frame in the XDSL frame. Instead,

the data is processed by the respective protocol stacks and all vestiges of one frame are erased prior to encapsulating the IP packet in the other frame.

Fixed-Size VDSL Frames Cannot Accommodate Ethernet Frames

Terry teaches encapsulating an Ethernet frame within an Ethernet Collision Avoidance Protocol (ECAP) frame (an "ECAP" frame is a term that is defined by Terry, as opposed to an industry standard definition). See, for example, Fig. 2 of Terry. Notably, Terry's ECAP frame is large enough to encapsulate an Ethernet frame, since the ECAP frame is defined by Terry to be a frame that includes the encapsulated Ethernet frame, preceded by overhead (O/H in Fig. 2) and followed by a check sequence (CHK in Fig. 2). See, e.g., Terry, col. 6, lines 40-43 and col. 7, lines 13-25, as highlighted above. Accordingly, Terry's ECAP frames are **variable length frames** based on the encapsulated Ethernet frame size. In contrast, XDSL frames (as taught in Locklear) are **fixed-size frames** defined by the XDSL standards.

One cannot simply add Locklear's teachings of transmitting IP packets received over Ethernet in fixed-size XDSL frames to Terry's teachings of encapsulating Ethernet packets to arrive at the features of claim 8 without violating the XDSL specifications. The XDSL modems in Locklear would

fail to function correctly if the encapsulation of Terry were used, since at least some XDSL frames would be larger than the XDSL standards permit. As known to one of ordinary skill in the art, the XDSL modems rely on the XDSL specifications to communicate and thus expect fixed-length frames at regular intervals, not variable length frames as taught by Terry. The teachings of Terry and Locklear are simply incompatible.

The fact that Locklear teaches transmitting data between Ethernet and XDSL, combined with Terry's ECAP teachings, does not lead one to a system in which each Ethernet frame is encapsulated in a frame transmitted on XDSL. Instead, **one of skill in the art would conclude that ECAP frames must be decapsulated down to the IP packet, and the IP packet encapsulated in XDSL frames, to transmit on XDSL as taught by Locklear.** Such teachings do not teach or suggest "encapsulating ... Ethernet frames within a plurality of frames, wherein each Ethernet frame is encapsulated entirely within a respective frame of the plurality of frames ... and transmitting said plurality of frames over said VDSL facility" as recited in claim 8.

For at least the above stated reasons, Appellant submits that claim 8 is patentable over the cited art.

Claim 10 recites a combination of features including: "receiving frames from said VDSL facility, wherein a given Ethernet frame is encapsulated entirely within a received frame." The same teachings of Terry and Locklear, highlighted above with regard to claim 8, are alleged to teach the above features of claim 10. Appellant submits that claim 10 is patentable over the cited art as well.

Claim 38 recites a combination of features including: "encapsulating the Ethernet frame within a first frame; and transmitting the first frame over a very high speed digital subscriber line (VDSL) facility." The same teachings of Terry and Locklear, highlighted above with regard to claim 8, are alleged to teach the above features of claim 38. Appellant submits that claim 38 is patentable over the cited art as well.

Claim 48 recites a combination of features including: "encapsulating an Ethernet frame within a first frame to be transmitted over a very high speed digital subscriber line (VDSL) facility." The same teachings of Terry and Locklear, highlighted above with regard to claim 8, are alleged to teach the above features of claim 48. Appellant submits that claim 48 is patentable over the cited art as well.

Claim 53 recites a combination of features including: "extracting an Ethernet frame from a first frame received over a very high speed digital

subscriber line (VDSL) facility." The same teachings of Terry and Locklear, highlighted above with regard to claim 8, are alleged to teach the above features of claim 53. Appellant submits that claim 53 is patentable over the cited art as well.

Claims 9, 11, 30-37, 39-47, 49-52, and 54-56 depend from one of claims 8, 10, 38, 48, or 53 and recite additional combinations of features not taught or suggested in the cited art.

Second Ground of Rejection:

Claims 30-32, 34-36, 40, 42-44, 46-47, and 52-56 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Terry in view of Locklear and Treadaway. Appellant respectfully traverses for at least the reasons given below.

Claims 30-32, 34-36, 40, 42-44, 46-47, and 52-56:

Treadaway's frames are also large enough to encapsulate Ethernet frames

This argument has not been previously presented to the Examiner.

Claims 30-32, 34-36, 40, 42-44, 46-47, and 52-56 depend from respective ones of the claims discussed above with regard to the first ground

of rejection. Accordingly, the rejection of claims 30-32, 34-36, 40, 42-44, 46-47, and 52-56 is in error for at least the reasons highlighted above with regard to the first ground.

The Examiner adds Treadaway to the proposed combination of Terry and Locklear, as allegedly teaching various features of claims 30-32, 34-36, 40, 42-44, 46-47, and 52-56. Treadaway does not cure the deficiencies in the Terry/Locklear combination with regard to the claims on which claims 30-32, 34-36, 40, 42-44, 46-47, and 52-56 depend. Accordingly, the rejection of claims 30-32, 34-36, 40, 42-44, 46-47, and 52-56 is in error for at least the above highlighted reasons.

In addition, Appellant further submits that Treadaway, similar to Terry, appears to teach a radio signal frame that is defined by Treadaway (as opposed to relying on some industry standard). See Treadaway, Treadaway, col. 14, lines 32-39, as highlighted above. Thus, Treadaway's frames are large enough to encapsulate the Ethernet frames, just like Terry's frames. Accordingly, for reasons similar to those highlighted above with respect to Terry and Locklear, it is not obvious to combine Treadaway's radio frames with Locklear's teachings related to XDSL frames.

For at least the above stated reasons, Appellant submits that the rejection of claim 30-32, 34-36, 40, 42-44, 46-47, and 52-56 is in error and requests reversal of the rejection.

Third Ground of Rejection:

Claims 33, 37, and 45 are rejected under 35 U.S.C. § 103(a) as being unpatenable over Terry in view of Locklear and Snodgrass. Appellant respectfully traverses for at least the reasons given below.

Claims 33, 37, and 45

The rejection is improper and does not cure the failure in the earlier rejections

This argument has not been previously presented to the Examiner.

Claims 33, 37, and 45 depend from claims 32, 36, and 43 respectively. Accordingly, the rejection of claims 33, 37, and 45 is in error for at least the reasons highlighted above with regard to claims 32, 36, and 43.

The Examiner adds Snodgrass to the proposed combination of Terry and Locklear as allegedly teaching features of claims 33, 37, and 45. At the outset, Appellant respectfully notes that such rejection is improper. More specifically, Claims 33, 37, and 45 depend from claims that stand rejected

over Terry, Locklear, and Treadaway. Snodgrass is only relied on to allegedly teach the features of claims 33, 37, and 45. Because the Examiner ignores the Treadaway art in making the rejection, claims 33, 37, and 45 cannot be properly rejected over an alleged combination of Terry, Locklear and Snodgrass.

Even were the rejection proper, Applicants submit that Snodgrass does not cure the deficiencies in the Terry/Locklear/Treadaway combination as highlighted above. Accordingly, the rejection of claims 33, 37, and 45 is in error for at least the above highlighted reasons.

For at least the above stated reasons, Appellant submits that the rejection of claim 33, 37, and 45 is in error and requests reversal of the rejection.

CONCLUSION

For the foregoing reasons, it is submitted that the Examiner's rejection of claims 8-11 and 30-56 was erroneous, and reversal of the decision is respectfully requested.

The Appeal Brief Fee was paid with the filing of the Appeal Brief on July 3, 2008. Because prosecution was reopened in response to the Appeal Brief, **no Appeal Brief Fee is due.** The Commissioner is authorized to charge any fees that may be due to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5957-48401.

If any extension of time (under 37 C.F.R. § 1.136) is necessary to prevent the above-referenced application from becoming abandoned, Applicant hereby petitions for such extension.

Respectfully submitted,

Date: September 11, 2009

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CLAIMS APPENDIX

The following lists claims 8-11 and 30-56, incorporating entered amendments, as on appeal.

1-7. (Cancelled)

8. (Rejected) A method of encapsulating Ethernet frames onto a Very high speed Digital Subscriber Line (VDSL) facility, said method comprising:

receiving Ethernet frames from an Ethernet source;

storing said Ethernet frames for subsequent forwarding;

encapsulating said previously stored Ethernet frames within a plurality

of frames, wherein each Ethernet frame is encapsulated entirely

within a respective frame of the plurality of frames; and

transmitting said plurality of frames over said VDSL facility.

9. (Rejected) The method according to claim 8, wherein said Ethernet source comprises a 10BaseT Ethernet source.

10. (Rejected) A method of extracting Ethernet frames from a Very high speed Digital Subscriber Line (VDSL) facility, said method comprising:

receiving frames from said VDSL facility, wherein a given Ethernet frame is encapsulated entirely within a received frame;
extracting Ethernet frames from the received frames;
storing said Ethernet frames for subsequent forwarding; and
forwarding said Ethernet frames to an Ethernet source.

11. (Rejected) The method according to claim 10, wherein said Ethernet source comprises a 10BaseT Ethernet source.

12-29. (Cancelled)

30. (Rejected) The method as recited in claim 8 wherein the Ethernet source comprises a 100BaseT Ethernet source.

31. (Rejected) The method as recited in claim 8 wherein the encapsulating comprises inserting a length field prior to the Ethernet frame.

32. (Rejected) The method as recited in claim 31 wherein the encapsulating further comprises inserting a preamble prior to the length field.

33. (Rejected) The method as recited in claim 32 wherein the preamble comprises a Barker code.
34. (Rejected) The method as recited in claim 10 wherein the Ethernet source comprises a 100BaseT Ethernet source.
35. (Rejected) The method as recited in claim 10 wherein the encapsulating comprises inserting a length field prior to the Ethernet frame.
36. (Rejected) The method as recited in claim 35 wherein the encapsulating further comprises inserting a preamble prior to the length field.
37. (Rejected) The method as recited in claim 36 wherein the preamble comprises a Barker code.
38. (Rejected) A method comprising:
- receiving an Ethernet frame from an Ethernet source;
 - encapsulating the Ethernet frame within a first frame; and
 - transmitting the first frame over a very high speed digital subscriber line (VDSL) facility.

39. (Rejected) The method as recited in claim 38 further comprising:
- receiving a second frame over the VDSL facility;
 - extracting a second Ethernet frame from the second VDSL frame; and
 - transmitting the second Ethernet frame to the Ethernet source.
40. (Rejected) The method as recited in claim 38 wherein the Ethernet source comprises a 100BaseT Ethernet source.
41. (Rejected) The method as recited in claim 38 wherein the Ethernet source comprises a 10BaseT Ethernet source.
42. (Rejected) The method as recited in claim 38 wherein the encapsulating comprises inserting a length field prior to the Ethernet frame.
43. (Rejected) The method as recited in claim 42 wherein the encapsulating further comprises inserting a preamble prior to the length field.
44. (Rejected) The method as recited in claim 43 wherein the preamble comprises a plurality of bytes exhibiting high autocorrelation properties.

45. (Rejected) The method as recited in claim 43 wherein the preamble comprises a Barker code.
46. (Rejected) The method as recited in claim 43 wherein the first frame excludes an Ethernet preamble that preceded the Ethernet frame on an Ethernet medium.
47. (Rejected) The method as recited in claim 46 where the first frame further excludes an Ethernet start of frame symbol that preceded the Ethernet frame on an Ethernet medium.
48. (Rejected) A method comprising encapsulating an Ethernet frame within a first frame to be transmitted over a very high speed digital subscriber line (VDSL) facility.
49. (Rejected) The method as recited in claim 48 further comprising transmitting the first frame over the VDSL facility.

50. (Rejected) The method as recited in claim 48 further comprising receiving the Ethernet frame from an Ethernet source.

51. (Rejected) The method as recited in claim 48 further comprising extracting another Ethernet frame from another frame.

52. (Rejected) The method as recited in claim 48 further comprising encapsulating a plurality of Ethernet frames in respective frames, wherein the plurality of Ethernet frames are variable length.

53. (Rejected) A method comprising extracting an Ethernet frame from a first frame received over a very high speed digital subscriber line (VDSL) facility.

54. (Rejected) The method as recited in claim 53 further comprising transmitting the Ethernet frame on an Ethernet facility.

55. (Rejected) The method as recited in claim 53 further comprising receiving the first frame from the VDSL facility.

56. (Rejected) The method as recited in claim 53 further comprising receiving a plurality of Ethernet frames, wherein the plurality of Ethernet frames are variable length.

CLAIM SUPPORT AND DRAWING ANALYSIS APPENDIX

This section identifies exemplary support for the claims that are argued in this appeal. For clarity and brevity, Appellant does not necessarily identify all support in the application for each claim. Rather, exemplary support that may permit the Board to rapidly identify features of the claims in the application and understand such features is indicated.

8. A method of encapsulating Ethernet frames {Fig. 4, reference numeral 60} onto a Very high speed Digital Subscriber Line (VDSL) facility {Fig. 1, reference numeral 16}, said method comprising:

receiving Ethernet frames from an Ethernet source {specification

page 6, lines 7-15; page 13, lines 4-6; page 14, lines 14-16};

storing said Ethernet frames for subsequent forwarding {specification

page 6, lines 22-25};

encapsulating said previously stored Ethernet frames within a plurality

of frames {specification page 7, lines 8-15}, wherein each

Ethernet frame is encapsulated entirely within a respective

frame of the plurality of frames {Fig. 6, reference numeral 90,

and Fig. 7; specification page 16, line 4-page 17, line 3}; and

transmitting said plurality of frames over said VDSL facility
{specification, page 7, lines 10-13}.

10. A method of extracting Ethernet frames **{Fig. 4, reference numeral 60}**
from a Very high speed Digital Subscriber Line (VDSL) facility **{Fig. 1,**
reference numeral 16}, said method comprising:

receiving frames from said VDSL facility **{specification page 6, lines**
11-15; page 13, lines 16-22; page 14, lines 22-25}, wherein a
given Ethernet frame is encapsulated entirely within a received
frame **{Fig. 6, reference numeral 90 and Fig. 7; specification**
page 16, line 4-page 17, line 3};

extracting Ethernet frames from the received frames **{specification**
page 6, lines 11-15; page 13, lines 23-25; page 14, lines 25-
28};

storing said Ethernet frames for subsequent forwarding **{specification**
page 7, lines 11-14}; and

forwarding said Ethernet frames to an Ethernet source **{specification**
page 6, lines 11-15; page 13, lines 26-27; page 14, lines 27-
28}.

30. The method as recited in claim 8 wherein the Ethernet source comprises a 100BaseT Ethernet source {specification page 8, lines 8-11}.

31. The method as recited in claim 8 wherein the encapsulating comprises inserting a length field {Fig. 6, reference numeral 94} prior to the Ethernet frame {Fig. 6, reference numeral 96} {specification page 16, lines 13-10}.

32. The method as recited in claim 31 wherein the encapsulating further comprises inserting a preamble {Fig. 6, reference numeral 92} prior to the length field {Fig. 6, reference numeral 94} {specification page 16, lines 4-6}.

33. The method as recited in claim 32 wherein the preamble {Fig. 6, reference numeral 92} comprises a Barker code {specification page 16, lines 8-9}.

34. The method as recited in claim 10 wherein the Ethernet source comprises a 100BaseT Ethernet source {specification page 8, lines 8-11}.

35. The method as recited in claim 10 wherein the encapsulating comprises inserting a length field {Fig. 6, reference numeral 94} prior to the Ethernet frame {Fig. 6, reference numeral 96} {specification page 16, lines 13-10}.

36. The method as recited in claim 35 wherein the encapsulating further comprises inserting a preamble {Fig. 6, reference numeral 92} prior to the length field {Fig. 6, reference numeral 94} {specification page 16, lines 4-6}.

37. The method as recited in claim 36 wherein the preamble {Fig. 6, reference numeral 92} comprises a Barker code {specification page 16, lines 8-9}.

38. A method comprising:

receiving an Ethernet frame {Fig. 4, reference numeral 60} from an Ethernet source {specification page 6, lines 7-15; page 13, lines 4-6; page 14, lines 14-16};

encapsulating the Ethernet frame within a first frame {Fig. 6, reference numeral 90 and specification page 7, lines 8-15};

and

transmitting the first frame over a very high speed digital subscriber line (VDSL) facility {**Fig. 1, reference numeral 16 and specification page 7, lines 10-13**}.

39. The method as recited in claim 38 further comprising:

receiving a second frame over the VDSL facility {**specification page**

6, lines 11-15; page 13, lines 16-22; page 14, lines 22-25};

extracting a second Ethernet frame from the second VDSL frame

{**specification page 6, lines 11-15; page 13, lines 23-25; page**

14, lines 25-28}; and

transmitting the second Ethernet frame to the Ethernet source

{**specification page 6, lines 11-15; page 13, lines 26-27; page**

14, lines 27-28}.

40. The method as recited in claim 38 wherein the Ethernet source comprises a 100BaseT Ethernet source {**specification page 8, lines 8-11**}.

42. The method as recited in claim 38 wherein the encapsulating comprises inserting a length field {**Fig. 6, reference numeral 94**} prior to the Ethernet frame {**Fig. 6, reference numeral 96**} {**specification page 16, lines 13-10**}.

43. The method as recited in claim 42 wherein the encapsulating further comprises inserting a preamble {Fig. 6, reference numeral 92} prior to the length field {Fig. 6, reference numeral 94} {specification page 16, lines 4-6}.
44. The method as recited in claim 43 wherein the preamble {Fig. 6, reference numeral 92} comprises a plurality of bytes exhibiting high autocorrelation properties {specification, page 16, lines 8-9}.
45. The method as recited in claim 43 wherein the preamble {Fig. 6, reference numeral 92} comprises a Barker code {specification page 16, lines 8-9}.
46. The method as recited in claim 43 wherein the first frame excludes an Ethernet preamble {Fig. 4, reference numeral 62} that preceded the Ethernet frame on an Ethernet medium {specification page 16, lines 9-12}.
47. The method as recited in claim 46 where the first frame further excludes an Ethernet start of frame symbol {Fig. 4, reference numeral 64} that

preceded the Ethernet frame on an Ethernet medium {Fig. 6, Fig. 7; specification page 16, lines 14-15}.

48. A method comprising encapsulating an Ethernet frame {Fig. 4, reference numeral 60} within a first frame {Fig. 6, reference numeral 90} to be transmitted over a very high speed digital subscriber line (VDSL) facility {Fig. 1, reference numeral 16} {specification page 7, lines 8-15}.

52. The method as recited in claim 48 further comprising encapsulating a plurality of Ethernet frames in respective frames, wherein the plurality of Ethernet frames are variable length {specification, page 7, lines 5-7; page 12, lines 26-28; page 15, lines 23-24}.

53. A method comprising extracting an Ethernet frame {Fig. 4, reference numeral 60} from a first frame {Fig. 6, reference numeral 90} received over a very high speed digital subscriber line (VDSL) facility {Fig. 1, reference numeral 16} {specification page 6, lines 11-15; page 13, lines 23-25; page 14, lines 25-28}.

56. (Rejected) The method as recited in claim 53 further comprising receiving a plurality of Ethernet frames, wherein the plurality of Ethernet frames are variable length {specification, page 7, lines 5-7; page 12, lines 26-28; page 15, lines 23-24}.

MEANS OR STEP PLUS FUNCTION ANALYSIS APPENDIX

No means or step plus function claims are currently pending.

EVIDENCE APPENDIX

No evidence submitted under 37 CFR §§ 1.130, 1.131 or 1.132 or otherwise entered by the Examiner is relied upon in this appeal.

RELATED CASES APPENDIX

No final or significant interlocutory decisions for related cases identified in the related cases section of this appeal have been received by Appellant.